

REMARKS/ARGUMENTS

Status of the Claims

Upon entry of the present amendment, claims 26-25, 35-37 and 52-69 are pending. Claim 26 is amended. Claims 37-34 are canceled without disclaimer or prejudice to renewal. New claims 59-69 are added. Claim 27-34 were withdrawn as drawn to a non-elected invention, to be examined upon a finding of allowability of a linking claim. Claim 26 is a linking claim.

Claim 26 is amended to reflect that the methods are directed to detecting a *genetically transmitted* deficiency in immune cell function associated with deficient glycosyltransferase activity. Therefore, although the disease is a deficiency in immune cell function, it can be detected using a diagnostic reagent that binds to a glycoconjugate from any type of cell, including immune cells. The glycoconjugate can, but need not be, bound to a cell. Support is found, for example, in WO 00/33076 on page 5, lines 2-9, on page 22, lines 2-3, on page 30, lines 12-13, and in claim 26 as originally filed.

New claims 59-67 replace presently withdrawn claims 27-34, and have been redrafted to properly depend from linking claim 26. Support is found, for example, on page 29, line 11 through page 30, line 31.

New claims 68-69 find support, for example, in Figure 10 and on page 7, lines 14-30.

The Examiner is thanked for noting that claims 57 and 58 are allowable in current form.

Request for Rejoinder under M.P.E.P. § 821.04

Claims 27-34 were withdrawn from examination as being drawn to a non-elected invention, to be examined upon determination of an allowable linking claim. The Examiner states on page 7 of the Official Action mailed on July 1, 2004 that "upon allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking

claim(s) will be entitled to examination in the instant application.” The Examiner further states that claim 26 links inventions VII, XVI (claims 27-29), XVIII (claims 33-34) and XIX (claims 35-37). *See, Id* and M.P.E.P. § 821.04.

Upon entry of the present amendments, Applicants believe that linking claim 26 is allowable. Accordingly, pursuant to M.P.E.P. § 821.04, Applicants respectfully request withdrawal of the restriction requirement as to the linked inventions and the allowance of new claims 59-67, as explained below.

Rejection under 35 U.S.C. § 112, enablement requirement

The Examiner has rejected claims 26, 35, 37 and 52-56 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. Applicants respectfully traverse.

In order to establish a *prima facie* case of lack of enablement, the Examiner has the burden to establish a reasonable basis to question the enablement provided for the claimed invention. *In re Wright*, 27 USPQ 1510, 1513 (Fed. Cir. 1993). As set forth in MPEP § 2164.01, “the test of enablement is not whether any experimentation is necessary, but whether... it is undue.” Further, the “fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation” (citations omitted). Finally, claims reading on inoperative embodiments are enabled if the skilled artisan understands how to avoid inoperative embodiments. *See, e.g., In re Cook and Merigold*, 169 USPQ 299, 301 (C.C.P.A. 1971).

Here, Applicants have shown those of skill how to practice the present methods using both the first type and second type of diagnostic reagents. In every instance, deficient glycosyltransferase activity associated with deficiency in immune cell function can be detected in at least two ways. First, deficient glycosyltransferase activity can be detected by observing absent or reduced levels of one type of glycoconjugate in a sample obtained from a mammal having the deficiency (*e.g.*, a glycoconjugate produced by the normal functioning of the deficient glycosyltransferase). This approach involves the second type of diagnostic reagent.

However, the deficient activity of one glycosyltransferase can reveal or unmask the enzymatic activity of another glycosyltransferase. Therefore, deficient glycosyltransferase activity also can be detected by observing increased levels of another type of glycoconjugate in a sample obtained from a mammal having the deficiency (*e.g.*, a glycoconjugate produced by the normal functioning of a second glycosyltransferase, other than the deficient glycosyltransferase, wherein the product of the second glycosyltransferase is modified or masked by the normal functioning of the deficient glycosyltransferase). This approach involves the first type of diagnostic reagent.

Applicants have demonstrated using both a first type of diagnostic reagent and a second type of diagnostic reagent in the case where the deficient glycosyltransferase activity (here, a ST3Gal I) results in cytotoxic T lymphocyte deficiency. The specification teaches that ST3Gal I acts at the termini of Core 1 type O-linked oligosaccharides to create the structure Sia α 2-3Gal β 1-3GalNAc (*see*, page 30, lines 17-19 of WO 00/33076). The lectins peanut agglutinin (PNA) and Jacalin (JAC) bind to Gal β 1-3GalNAc (unmodified by ST3Gal I), but not to Sia α 2-3Gal β 1-3GalNAc (created by ST3Gal I) (page 30, lines 20-22). The lectin from *Maackia amurensis* seeds, MAL II, binds to sialic acids in an α 2-3 linkage (page 30, lines 26-28). Accordingly, one can diagnose a deficiency in ST3 Gal I by observing an increase in binding of PNA or JAC to Gal β 1-3GalNAc; and/or a decrease in binding of MAL II to Sia α 2-3Gal β 1-3GalNAc on a test sample in comparison to a normal sample (page 30, lines 22-25 and lines 28-29). Applicants demonstrate using both first type and second type of diagnostic reagents in Example 5 on page 60 and in Figure 4 (legend on page 6, lines 15-17).

Because applicants have demonstrated to the skilled person how to use both first type and second type of diagnostic reagents in practicing the present methods without undue experimentation, the Examiner is respectfully requested to withdraw this rejection.

Allowability of New Claims 59-67

Applicants believe that the present arguments overcome the Examiner's rejection under 35 U.S.C. § 112, first paragraph, the only rejection made in the present official action.

Appl. No. 09/857,233
Amdt. dated March 16, 2006
Amendment under 37 CFR 1.116 Expedited Procedure
Examining Group 1644

PATENT

Therefore, the entire scope of linking claim 26 is allowable. Because claims 59-67 ultimately depend from linking claim 26, they necessarily include all of the limitations of allowable linking claim 26. It follows that new claims 59-67 are also allowable.

Request for Telephonic Interview

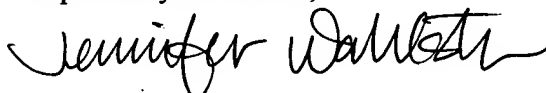
Applicants believe the present claims to be allowable. However, should the Examiner still have concerns or questions regarding the practice of the present methods, Applicants respectfully request a telephonic interview with the Examiner.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



Jennifer L. Wahlsten
Reg. No. 46,226

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 415-576-0200
Fax: 415-576-0300
Attachments
JLW:bjd
60645008 v1